Notice of Allowability	Application No.	Applicant(s)	
	09/993,656	CABRERA ET AL.	
	Examiner	Art Unit	
	LeChi Truong	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed on 02/23/2005*.

2. ☒ The allowed claim(s) is/are *1-2, 4-9, 15-22, 29-36, 38-46 now renumbered as claims 1-33*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

1. This is in responding to the amendment filed 03/23/2005.

Allowable Subject Matter

2. Claims 1-2, 4-9, 15-22, 29-36, 38-46 are allowed.

3. The following is an examiner's statement of reasons for allowance:

As to claims 1, 8, 17, 29, 32, 34, 46 , the prior art as taught Martino(US. Patent 5,608551) and Narisi et al (US 6,233,619 b1) do not teach on render obvious the limitations recited in claims 1, 8, 17, 29, 32, 34, 46 when taken in the context of the claims as a whole, stored rules instructing the message dispatcher to route a first network message based on a first arbitrary attribute and a second message based on a second arbitrary attribute, wherein the second arbitrary attribute is different from the first arbitrary attribute, wherein the first arbitrary attribute is selected from a set of header and data contained in each message, wherein each rule is stored in a message handler, and wherein a first message handler sends an alteration message to alter a second message handler responsive to the occurrence of a predetermined condition, and wherein the message dispatcher module comprises computer executable instructions that, when executed, cause the data processing apparatus to perform the steps of:(i) polling a second apparatus in first predetermined intervals; and (ii) receiving poll responses from the second apparatus, wherein the predetermined condition comprises a nonoccurrence of step (ii) for a predetermined amount of time, as recited in the independent claims 1, 8, 17, 29, 32, 34, 46.

Moreover, evidence for modifying the prior art teachings by one of ordinary skill level in the art was not uncovered so as to result in the invention as recited in claims 1, 8, 17, 29, 32, 34, 46.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LeChi Truong whose telephone number is (571) 272 3767. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomson, William can be reached on (571) 272 3718. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR of Public PAIP. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIP system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

LeChi Truong

May 8, 2007

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no lather than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Ross A. Dannenberg (Registration number: 49,024), on 35/9/2007.

3. Amend the following claims:

1. (Currently Amended) An apparatus, comprising:

a message dispatcher that routes and dispatches messages, wherein each message is routed based on an arbitrary portion of the message's contents;

an interface through which application programs communicate with the message dispatcher to define the arbitrary portion of the message's contents; and

stored rules instructing the message dispatcher to route a first network message based on a first arbitrary attribute and a second message based on a second arbitrary attribute, wherein the second arbitrary attribute is different from the first arbitrary attribute,

wherein the first arbitrary attribute is selected from a set of header and data contained in each message,

wherein each rule is stored in a message handler, and

wherein the message dispatcher comprises computer executable instructions that, when executed, cause the data processing apparatus to perform the steps of:

(i) polling a second apparatus at predetermined intervals; and

(ii) receiving poll responses from the second apparatus;

wherein responsive to a predetermined condition comprising a failure to receive the poll responses, a first message handler sends an alteration message to alter a second message handler;

wherein the predetermined condition comprises a nonoccurrence of step (ii) for a predetermined amount of time.

2. (Original) The apparatus of claim 1, wherein the message dispatcher comprises a transport independent message dispatcher, and the message dispatcher communicates using a transport independent protocol.

3. (Canceled)

4. (Currently Amended) The apparatus of claim 1 wherein the message dispatcher routes the first network message, addressed to a recipient from a first sender, to a first server, and wherein the message dispatcher routes the second network message, addressed to the recipient from a second sender, to a second server.

5. (Original) The apparatus of claim 1, wherein the message dispatcher routes messages using a virtual network protocol above a transport layer protocol.

6. (Previously Presented) The apparatus of claim 5, further comprising a transport adapter to convert messages between the transport layer protocol and the virtual network protocol.

7. (Original) The apparatus of claim 1, wherein the arbitrary portion of the message's contents comprises an application level header.

8. (Currently Amended) A data processing apparatus, comprising:

a message dispatcher module;

a transport adapter for interfacing the message dispatcher module to a transport protocol;

an interface through which application programs communicate with the message dispatcher module;

stored rules instructing the message dispatcher module to route a first network message based on a first arbitrary attribute of said first network message, and to route a second network message based on a second arbitrary attribute different from said first arbitrary attribute, of said second network message, wherein the first and second arbitrary attributes are selected from a set of headers and data contained in each network message;

<u>wherein each rule is stored in a message handler, and wherein a first message handler sends an alteration message to alter a second message handler responsive to the occurrence of a predetermined condition, and wherein the message dispatcher module comprises computer</u>

executable instructions that, when executed, cause the data processing apparatus to perform the steps of:

(i) polling a second apparatus in first predetermined intervals; and

(ii) receiving poll responses from the second apparatus,

wherein the predetermined condition comprises a nonoccurrence of step (ii) for a predetermined amount of time.

9. (Previously Presented) The data processing apparatus of claim 8, wherein the first arbitrary attribute comprises an application created header.

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Cancelled)

14. (Canceled)

15. (Currently Amended) The data processing apparatus of claim 8, wherein when the predetermined condition is met, the message dispatcher alters the second message handler to redirect messages, that were originally addressed to the second apparatus, to a third apparatus.

16. (Original) The data processing apparatus of claim 15, wherein the computer executable instructions further cause the data processing apparatus to perform the step of sending routing information to a second message dispatcher, indicating the change of routing information corresponding to the second and third apparatus.

17. (Currently Amended) A method for routing network messages, comprising the steps of:

(i) routing a first network message based on a first attribute of the first network message;

(ii) routing a second network message based on a second attribute, different from said first attribute, of said second network message;

(iii) storing rules instructing a message dispatcher module to route the first network message and the second network message, wherein each rule is stored in a message handler, and wherein a first message handler sends an alteration message to alter a second message handler responsive to the occurrence of a predetermined condition, and wherein the message dispatcher module comprises computer executable instructions that, when executed, cause the data processing apparatus to perform the steps of:

(iv) polling a first data processing device in predetermined intervals;

(v) receiving poll responses from the first data processing device; and

(vi) when step (v) has not occurred for a predetermined amount of time, altering a message handler to direct messages originally addressed to the first data processing device to a second data processing device,

wherein the first and second attributes are arbitrarily selected from a set of headers and data of each network message.

18. (Currently Amended) The method of claim 17, further comprising the steps of:

(vii) receiving instructions comprising a message field and a field condition;

(viii) modifying a message handler based on the received instructions.

19. (Currently Amended) The method of claim 18, wherein, in step (vii), the instructions are received from a network application program.

20. (Currently Amended) The method of claim 18, wherein, in step (vii), the instructions are based on user-input.

21. (Original) The method of claim 17, wherein, in steps (i) and (ii), each message is output to a transport adapter that converts the message from a virtual network protocol to a transport protocol.

22. (Original) The method of claim 17, wherein, in step (i), the first attribute comprises an application created header.

23. (Canceled)

24. (Cancelled)

25. (Canceled)

26. (Cancelled)

27. (Cancelled)

28. (Canceled)

29. (Currently Amended) A network router comprising computer executable instructions that, when executed by the router, perform steps of:

(i) storing routing information received from a network application, wherein the routing information comprises a message field, a field condition, and a routing instruction;

(ii) receiving at least a first and a second network message;

(iii) processing each of the at least first and second network messages by comparing each of the at least first and second network messages to the stored routing information;

(iv) when a message field of each of the received at least first and second network message meets the field condition, performing the routing instruction for each of the at least first and second network message,

wherein the network router stores rules instructing a message dispatcher to route the first network message based on a first arbitrary attribute, and to route the second network message based on a second arbitrary attribute, wherein the second arbitrary attribute is different from the first arbitrary attribute, and wherein each rule is stored in a message handler, and wherein a first message handler sends an alteration message to alter a second message handler responsive to the occurrence of a predetermined condition, and wherein the message dispatcher comprises computer executable instructions that, when executed, cause the network router to perform the steps of:

(v) polling an apparatus in predetermined intervals; and

(vi) receiving poll responses from the apparatus,

wherein the predetermined condition comprises the non-occurrence of step (vi) for a predetermined amount of time.

30. (Currently Amended) The network router of step 29, wherein, in step (iv), the routing instruction comprises altering the corresponding at least first and second network messages.

31. (Currently Amended) The network router of step 29, wherein, in step (iv), the routing instruction comprises routing the corresponding at least first and second network messages based on an application level header.

32. (Currently Amended) A computer network, comprising:

a plurality of computers, each comprising:

at least one transport adapter that converts messages between a transport layer protocol and a network protocol; and

a message dispatcher that routes and dispatches messages based on an arbitrary portion of the message's contents, wherein the message dispatcher in each computer routes messages in a virtual network protocol over the transport layer protocol using the at least one transport adapter;

stored rules that instruct the message dispatcher to route a first network message based on a first arbitrary attribute and to route a second network message based on a second arbitrary attribute, wherein the second arbitrary attribute is different from the first arbitrary attribute, and

wherein each of the stored rules is stored in a message handler, and wherein a first message handler sends an alteration message to alter a second message handler responsive to the occurrence of a predetermined condition, and

wherein the message dispatcher comprises computer executable instructions that, when executed, cause each computer to perform the steps of:

(i) polling an additional computer in first predetermined intervals; and

(ii) receiving poll responses from the additional computer,

wherein the predetermined condition comprises the non-occurrence of step (ii) for a predetermined amount of time.

33. (Original) The computer network of claim 32, wherein a first message dispatcher in a first computer is configurable for use with a new transport protocol by adding a new transport adapter that converts messages between the new transport layer protocol and the network protocol, without requiring a network application to be reconfigured for use with the new transport protocol.

34. (Currently Amended) A virtual network, comprising at least one virtualized component inserted between layer 7 and layer 6 of an OSI protocol stack, wherein said virtualized component provides a virtual network service, wherein the at least one virtualized component comprises a virtual network message dispatcher that routs and dispatches messages, wherein each message is routed based on an arbitrary portion of the message's contents, and wherein each rule is stored in a message handler, and wherein the virtual network message dispatcher comprises computer executable instructions that, when executed, cause a first data processing apparatus to perform the steps of: (i) polling a second data processing apparatus at predetermined intervals; and (ii) receiving poll responses from the second data processing apparatus, wherein a first message handler sends an alteration message to alter a second message handler responsive to the first data processing apparatus failing to receive the poll response in step (ii), said failure being a predetermined condition.

35. (Currently Amended) The virtual network of claim 34, wherein the virtual network message dispatcher routes messages according to virtual names and locations.

36. (Previously Presented) The virtual network of claim 34, wherein the at least one virtualized component comprises a synchronization module to ensure that distributed data within the virtual network remains synchronized.

37. (Canceled)

38. (Previously Presented) The virtual network of claim 34, wherein the at least one virtualized component comprises a names module to provide name resolution services based on any substring of a virtual name.

39. (Previously Presented) The virtual network of claim 34, wherein the at least one virtualized component comprises a groups module to manage name-mapping tables.

40. (Previously Presented) The virtual network of claim 34, wherein the at least one virtualized component comprises an addressing module to perform naming and routing services for fixed-length address names.

41. (Previously Presented) The virtual network of claim 34, wherein the at least one virtualized component comprises a security module to ensure that message contents are secure and authentic.

42. (Previously Presented) The virtual network of claim 34, wherein the at least one virtualized component comprises an administrative module to monitor network performance and usage.

43. (Currently Amended) The method of claim 17, further comprising the step of:

(vii) adding a new message handler to route messages based on a newly created type of message header.

44. (Original) The method of claim 17, wherein either of the first or second attributes correspond to a geographic location of the sender of the message.

45. (Original) The method of claim 17, wherein either of the first or second attributes correspond to a class of service of the sender of the message.

46. (Currently Amended) A computer network architecture comprising a plurality of data processing devices interconnected via a computer network, each data processing device comprising:

a virtual message dispatcher that routes messages to intended destinations and dispatches messages to appropriate applications at their intended destination, wherein each message is handled based on an arbitrary portion of the message's contents;

stored rules that instruct the virtual message dispatcher to route a first network message based on a first arbitrary attribute and a second network message based on a second arbitrary

attribute different from the first arbitrary attribute, wherein a first intended routing destination is replaced by a second intended routing destination when the first intended routing destination fails to respond to a plurality of poll requests; and

an interface through which OSI layer 7 application programs communicate with the message dispatcher to define the arbitrary portion of the message's contents by which each message is handled,

wherein the virtual message dispatcher comprises a transport adapter for converting messages between a virtual network protocol used by network applications and a transport protocol used by the computer network, and

wherein the virtual message dispatcher is configurable for use with a second transport protocol by adding a second transport adapter that converts messages between the second transport protocol and the virtual network protocol, without requiring any network applications to be reconfigured for use with the second transport protocol.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LeChi Truong whose telephone number is (571) 272 3767. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomson, William can be reached on (571) 272 3718. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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LeChi Truong

May 10, 2007

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER